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530 7590 03/31/2008 LERNER, DAVID, LITTENBERG, KRUMHOLZ & MENTLIK 600 SOUTH AVENUE WEST WESTFIELD, NJ 07090				
EXAMINER				
WONG, BLANCHE				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary****Application No.**

10/600,749

**Applicant(s)**

SUGAYA, SHIGERU

**Examiner**

BLANCHE WONG

**Art Unit**

2619

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 December 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2-4-8 and 10-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-4-8, 10-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 June 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/S508)
- Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the interference detecting means and buffer frame period setting means (both in claim 1); a beacon transmission step, an interference detection step, a buffer frame period setting step (all in claim 8); beacon information detecting means, collision detecting means, interference informing means (all in claim 14); beacon information detecting step, collision detecting step, interference informing step (all in claim 17) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

### ***Claim Objections***

2. Claims 2,4,5,7,8,10-13 are objected to because of the following informalities:

With regard to claim 2, Examiner suggests replacing "the another network" in line 26 with "the another wireless network" in consistent with "another one of the plurality of wireless networks" in lines 14-15.

With regard to claim 4, Examiner suggests replacing "/" in line 5 with the word "or".

With regard to claim 5, Examiner suggests replacing "the buffer frame setting means" in line 2 with "the buffer frame period setting means" in consistent with "buffer frame period setting means" in claim 2.

With regard to claim 7, Examiner suggests replacing "the buffer frame setting means" in line 2 with "the buffer frame period setting means" in consistent with "buffer frame period setting means" in claim 2.

With regard to claim 8, Examiner suggests replacing "the another network" in line 26 with "the another wireless network" in consistent with "another one of the plurality of wireless networks" in lines 14-15.

With regard to claim 10, Examiner suggests replacing "/" in line 5 with the word "or".

With regard to claim 11, Examiner suggests replacing "the buffer frame setting step" in line 2 with "the buffer frame period setting step" in consistent with "buffer frame period setting step" in claim 8.

With regard to claim 13, Examiner suggests replacing "the buffer frame setting step" in line 2 with "the buffer frame period setting step" in consistent with "buffer frame period setting step" in claim 8.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. **Claims 2,4-7** are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for “a radio communication apparatus acting as a PNC generates beacon information in the central controller 67 and transmits the generated information as a beacon signal from the radio transmitter 63 according to the timing of a predetermined superframe period from the clocking device 69, thereby operating the wireless network” (Specification, p.25, para. 2), does not reasonably provide enablement for “a radio communication apparatus comprising ... interference detecting means ... and buffer frame period setting means for setting ... a buffer frame period that is of different length than the transmission frame period to change the time of the transmission frame period ...” (claim 2). The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

5. **Claims 8,10-13** are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for “First, a superframe period of the wireless network is set in step S1. ... Subsequently, it is determined in step S4 whether a beacon signal from another wireless network has been received. ... If it is determined that a beacon signal ... has been received, then parameters of primarily a CAP and a CFP described in the beacon signal are acquired in step S5 ...” (Specification, p.28, para. 3, to p.29, para. 1), does not reasonably provide enablement for all the details entailing “a beacon transmission step ... an interference detection step ... a buffer frame period setting step ...” (claim 8). The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims.

For example, Specification discloses "Subsequently, it is determined in step S4 whether a beacon signal from another wireless network has been received. ... If it is determined that a beacon signal ... has been received, then parameters of primarily a CAP and a CFP described in the beacon signal are acquired in step S5 ..." whereas claim 8 recites "an interference detection steps for detecting whether the given wireless network interferences with another one of the plurality of wireless networks; and ... the interference detection step detecting interference of the beacon information based on parameters obtained by receiving further beacon information received from the another wireless network". Even if assuming a beacon signal from another wireless network is interference, the Specification discloses acquiring parameters only if there is a beacon signal whereas claim 8 recites detecting interference based on parameters.

6. Claims 22 and 23 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for "a buffer superframe period is temporarily set in its own superframe period" (Specification, p.29, para. 5), does not reasonably provide enablement for "a buffer frame period having a different length than the associated transmission frame period is set temporarily in one of the at least two wireless networks to prevent a collision between a first beacon signal transmitted by a first control station associated with one of the at least two wireless networks and a second beacon signal transmitted by a second control station associated with another of the at least two wireless networks, the buffer frame period adjusting a length of an interval between the fist beacon signal and the second beacon signal" (claim 22) and "a buffer frame period having a different length than the associated transmission frame period is set temporarily in one of

the at least two wireless networks to prevent competition between a first non-competitive transmission field of a first transmission frame period associated with the one of the at least two wireless networks and a second non-competitive transmission field of a second transmission frame period associated with another of the at least two wireless networks, the buffer frame period adjusting a positional relationship between a timing of the first transmission frame period and a time of the second transmission frame period" (claim 23). The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make or use the invention commensurate in scope with these claims.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. **Claims 4-5** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. There is insufficient antecedent basis for this limitation in the claim.

Claim 4, line 7, "contention free periods". Examiner notes that there is "a contention free period" in lines 3-4.

Claim 4, line 9, "the further beacon information".

Claim 5, line 5, "the contention free periods of the given wireless network and the another wireless networks".

***Claim Rejections - 35 USC § 102***

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11. **Claims 14,17,21-23** are rejected under 35 U.S.C. 102(e) as being anticipated by Soomro et al. (Pub No. US 2003/0002456).

With regard to claims 14,17,21, Soomro discloses

beacon information receiving means (**STA 104-109 in Fig. 1**) for receiving first beacon information (**beacon**) from a first control station (**e.g. STA/AP 107 in Fig. 1**) of a first one of the plurality of wireless networks (**e.g. wireless network 102 in Fig. 1**) located in a predetermined beacon information receiving range (**periodic interval**) ("**At least one station within each of wireless networks 101-103 ... and the access point(s) transmits a ... beacon at periodic intervals to "advertise" wireless networking capabilities ...**", para. [0025]);

beacon information detecting means (**STA 104-109 in Fig. 1**) for detecting second beacon information from a second control station (**e.g. STA/AP 108 in Fig. 1**) of second one of the plurality of wireless networks (**e.g. wireless network 103 in Fig. 1**);



collision detecting means for detecting whether the first beacon information collides with the second beacon information (**"IEEE 802.11, wireless communications within wireless networks 101-103 ... collision avoidance", para. [0020]**); and

interference information means for notifying the first control station of the first network of a beacon information collision detection result (**"IEEE 802.11 ... a means to detect or infer the presence of other ... avoid interference ...", para. [0022]**).

With regard to claim 22, Soomro discloses

a plurality of wireless networks (**wireless networks 101-103 in Fig. 1, para. [0018]**), each one of the plurality of wireless networks including an associated plurality of radio communication apparatuses (**STA 104-105, 106-107, 108-109, para. [0018]**) and an associated control station (**STA/AP 107, 108 in Fig. 1**), the associated control station being operable to allocate a resource (**frequency channel**) (**"The DFS interval indicates the mazimum duration ... in a particular frequency channel..."**, para. [0030]) to each associated radio communication apparatus of that wireless network in an associated transmission frame period (**"The initiating STA then transmits the beacon frame in a distributed manner based on the beacon transmission rule within the IEEE 802.11 ... standard. ... each receiving STA updates the locally stored DFS owner and DFS count values", para. [0036]**) and to transmit a beacon signal at a predetermined timing within the associated transmission frame period (**periodic interval**) (**"At least one station within each of wireless networks 101-103 ... and the access point(s) transmits a ... beacon at periodic intervals to "advertise" wireless networking capabilities ...", para. [0025]**),

wherein upon detection of interference ( **"IEEE 802.11 ... a means to detect or infer the presence of other ... avoid interference ..."**, para. [0022]) between at least two of the plurality of wireless networks, a buffer frame period having a different length than the associated transmission frame period (**DFS interval of DFS count values**) (**See Also DFS interval parameter in para. [0028]**) is set temporarily in one of the at least two wireless networks to prevent a collision (**"IEEE 802.11, wireless communications within wireless networks 101-103 ... collision avoidance"**, para. [0020]) between a first beacon signal transmitted by a first control station (**e.g. STA/AP 107 in Fig. 1**) associated with one of the at least two wireless networks (**e.g. wireless network 102 in Fig. 1**) and a second beacon signal transmitted by a second control station (**e.g. STA/AP 108 in Fig. 1**) associated with another of the at least two wireless networks (**e.g. wireless network 103 in Fig. 1**), the buffer frame period adjusting a length of an interval between the first beacon signal and the second beacon signal (**"The initiating STA then transmits the beacon frame in a distributed manner based on the beacon transmission rule within the IEEE 802.11 ... standard. ... each receiving STA updates the locally stored DFS owner and DFS count values"**, para. [0036]).

With regard to claim 23, Soomro discloses

a plurality of wireless networks (**wireless networks 101-103 in Fig. 1, para. [0018]**), each one of the plurality of wireless networks including an associated plurality of radio communication apparatuses (**STA 104-105, 106-107, 108-109, para. [0018]**) and an associated control station (**STA/AP 107, 108 in Fig. 1**), the associated control station being

operable to allocate a resource (**frequency channel**) ("**The DFS interval indicates the maximum duration ... in a particular frequency channel...**", para. [0030]) to each associated radio communication apparatus of that wireless network in an associated transmission frame period ("**The initiating STA then transmits the beacon frame in a distributed manner based on the beacon transmission rule within the IEEE 802.11 ... standard. ... each receiving STA updates the locally stored DFS owner and DFS count values**", para. [0036]) and to transmit a beacon signal at a predetermined timing within the associated transmission frame period (**periodic interval**) ("**At least one station within each of wireless networks 101-103 ... and the access point(s) transmits a ... beacon at periodic intervals to "advertise" wireless networking capabilities ...**", para. [0025]),

wherein upon detection of interference ( "**IEEE 802.11 ... a means to detect or infer the presence of other ... avoid interference ...**", para. [0022]) between at least two of the plurality of wireless networks, a buffer frame period having a different length than the associated transmission frame period (**DFS interval of DFS count values**) (*See A/so DFS interval parameter in para. [0028]*) is set temporarily in one of the at least two wireless networks to prevent competition ( "**IEEE 802.11 ... a means to detect or infer the presence of other ... avoid interference ...**", para. [0022]) between a first non-competitive transmission field of a first transmission frame period (**DFS interval of DFS count values in beacon**) (*See A/so DFS interval parameter in para. [0028]*) associated with the one of the at least two wireless networks (**e.g. wireless network 102 in Fig. 1**) and a second non-competitive transmission field of a second transmission frame period (**DFS interval of DFS count values in beacon**) (*See A/so DFS interval parameter in para. [0028]*) associated

with another of the at least two wireless networks (e.g. **wireless network 103 in Fig. 1**), the buffer frame period adjusting a positional relationship between a timing of the first transmission frame period and a time of the second transmission frame period ("**The initiating STA then transmits the beacon frame in a distributed manner based on the beacon transmission rule within the IEEE 802.11 ... standard. ... each receiving STA updates the locally stored DFS owner and DFS count values**", para. [0036]).

***Claim Rejections - 35 USC § 103***

12. Claims 2,8,20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujita et al. (U.S. Pat No. 5,412,659) in view of Soomro.

With regard to claims 2,8,20, Fujita discloses a radio communication apparatus comprising:

beacon transmitting means (**controller**) for setting a transmission frame period of a local network (**retransmission of message**) and transmitting beacon information (**signaling information**) regarding resource allocation (**frame is busy or not**) (**controller ... to generate a signaling message ... to determine whether the next up-link frame is busy or idle ... determine whether a previously sent message is properly received or not ...**, col. 3, lines 35-43 and **... to transmit the stored message if a previous transmission is found to be futile**, col. 3, lines 47-48) at a predetermined position (**appropriate time slots**) of the transmission frame period (**signals from mobile stations**,

**either information or signaling messages, are transmitted on appropriate time slots, col. 2, lines 62-64);**

interference detecting means **(controller)** for detecting whether the local network interferes with another network **(determine whether a previously sent message is properly received or not);** and

buffer frame period setting means **(controller)** for setting a buffer frame period having a different frame period to change the position of a transmission frame period upon detection of interference between network **(transmit the stored message if a previous transmission is found to be futile).**

However, Fujita fails to teach an interference detecting means detecting interference of the beacon information based on parameters obtained by receiving further beacon information received from the another wireless network.

Soomro discloses the interference detecting means **(“IEEE 802.11 ... a means to detect or infer the presence of other ... avoid interference ...”, para. [0022])** detecting interference of the beacon information based on parameters **(“The bodies of beacon ... contain ... a timestamp, a beacon interval, ... a contention free parameter ...”, para. [0027])** obtained by receiving further beacon information **(beacon)** received from the another wireless network **(wireless networks 101-103)** **(“At least one station within each of wireless networks 101-103 ... and the access point(s) transmits a ... beacon ...”, para. [0025]).**

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine an interference detecting means as taught in Soomro, with Fujita, in order to comply with IEEE 802.11 standard.

### ***Conclusion***

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **BLANCHE WONG** whose telephone number is (571)272-3177. The examiner can normally be reached on Monday through Friday, 830am to 530pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Edan Orgad** can be reached on 571-272-7884. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Blanche Wong/  
Examiner, Art Unit 2619  
March 21, 2008

/Edan Orgad/  
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